

Ken Takeuchi et al. – U.S. Serial No. 10/073,999

The listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1 - 46 (Previously Cancelled).

47. (Previously Presented) A nonvolatile semiconductor memory comprising:

a first memory cell section including a first memory cell;

a second memory cell section including a second memory cell;

a first signal line connected to said first memory cell section;

a second signal line connected to said second memory cell section, being different from said

first signal line; and

a latch circuit connected to one ends of said first and second signal lines;

wherein first program /read data of said first memory cell is latched in said latch circuit,

while second program /read data of said second memory cell is held by said second signal line.

48. (Previously Presented) A nonvolatile semiconductor memory comprising:

a first memory cell section including a first memory cell;

a second memory cell section including a second memory cell;

a first signal line connected to said first memory cell section;

a second signal line connected to said second memory cell section, being different from said

first signal line; and

a latch circuit connected to one ends of said first and second signal lines;

wherein

said first and second memory cells are programmed substantially simultaneously; and

while said program voltage is supplied to said second memory cell, a verify read operation to verify

Ken Takeuchi et al. – U.S. Serial No. 10/073,999

whether said first memory cell has been programmed sufficiently, is carried out by said latch circuit, and while said program voltage is supplied to said first memory cell, a verify read operation to verify whether said second memory cell has been programmed sufficiently, is carried out by said latch circuit.

49. (Previously Presented) A nonvolatile semiconductor memory according to claim 48, wherein

while a program voltage is supplied to said second memory cell, program data of said second memory cell is held by said second signal line, and

while said program voltage is supplied to said first memory cell, program data of said first memory cell is held by said first signal line.

50. (Previously Presented) A nonvolatile semiconductor memory comprising:

a first memory cell section including a first memory cell;

a second memory cell section including a second memory cell;

a first signal line connected to said first memory cell section;

a second signal line connected to said second memory cell section, being different from said first signal line; and

a latch circuit connected to one ends of said first and second signal lines;

wherein

said first and second memory cells are programmed substantially simultaneously;

while a program voltage is supplied to said second memory cell, program data of said second memory cell is held by said second signal line, and while said program voltage is supplied to said second memory cell, the program data of said first memory cell held by said first signal line is

Ken Takeuchi et al. – U.S. Serial No. 10/073,999

latched in said latch circuit and a verify read operation to verify whether said first memory cell has been programmed sufficiently, is carried out by said latch circuit;

while said program voltage is supplied to said first memory cell, program data of said first memory cell is held by said first signal line, and while said program voltage is supplied to said first memory cell, the program of data said second memory cell held by said second signal line is latched in said latch circuit and a verify read operation to verify whether said second memory cell has been programmed sufficiently, is carried out by said latch circuit.

51. (Original) The nonvolatile semiconductor memory according to claim 47, wherein

said first memory cell and said second memory cell are connected to different word lines.

52. (Original) The nonvolatile semiconductor memory according to claim 48, wherein

said first memory cell and said second memory cell are connected to different word lines.

53. (Original) The nonvolatile semiconductor memory according to claim 49, wherein

said first memory cell and said second memory cell are connected to different word lines.

54. (Original) The nonvolatile semiconductor memory according to claim 50, wherein

said first memory cell and said second memory cell are connected to different word lines.

55. (Previously Presented) A nonvolatile semiconductor memory comprising:
a first memory cell section including a first memory cell;

Ken Takeuchi et al. – U.S. Serial No. 10/073,999

a first signal line connected to said first memory cell section;
a second signal line, being different from said first signal line; and
a latch circuit connected to one ends of said first and second signal lines latching program /
read data;

wherein

said program / read data of said first memory cell is held by said second signal line.

56. (Currently Amended) A nonvolatile semiconductor memory comprising:

a first memory cell section including a first memory cell;
a first signal line connected to said first memory cell section;
a second signal line, being different from said first signal line; and
a latch circuit connected to one ends of said first and second signal lines, latching program /
read data;

wherein

while a program voltage is supplied to said first memory cell, program data of said first
memory cell is held by at least one of said first and second signal lines;

after said program voltage is supplied to said first memory cell, said ~~data-latch~~ circuit is
electrically connected to said second signal line and the program data of said first memory cell held
by said second signal line is latched in said latch circuit; and

a verify read operation to verify whether said first memory cell has been sufficiently
programmed, is carried out using said program data latched in said latch circuit.

57. (Currently Amended) A nonvolatile semiconductor memory comprising:

a first memory cell section including a first memory cell;

Ken Takeuchi et al. – U.S. Serial No. 10/073,999

a first signal line connected to said first memory cell section;
a second signal line;
a thirdsecond memory cell section including a thirdsecond memory cell;
a third signal line connected to said thirdsecond memory cell section;
a fourth signal line; and
a latch circuit connected to one ends of said first, second, third and fourth signal lines,
latching program/read data of at least one of said first and thirdsecond memory cells;
wherein
said first, second, third and fourth signal lines are different from each other;
said first and thirdsecond memory cells are programmed substantially simultaneously,
program data of said first memory cell is held by at least one of said first and second signal lines, and
program data of said thirdsecond memory cell is held by at least one of said third and fourth signal
lines while a program voltage is supplied to said first and second memory cells;
a verify read operation to verify whether said first memory cell has been sufficiently
programmed, is carried out by said latch circuit, and program data of said thirdsecond memory cell is
held by said fourth signal line while conducting the verify read operation of said first memory cell;
and
said latch circuit and said fourth signal line are electrically connected to each other, after the
program data of said thirdsecond memory cell held by said fourth signal line is latched in said latch
circuit, a verify read operation to verify whether said thirdsecond memory cell has been sufficiently
programmed, is carried out using the program data of said thirdsecond memory cell held by said
latch circuit, and while conducting a verify read operation of said thirdsecond memory cell, the

Ken Takeuchi et al – U.S. Serial No. 10/073,999

program data of said first memory cell is held by said second signal line.

58. (Currently Amended) The nonvolatile semiconductor memory according to claim 57,
wherein

said first and ~~third~~ second memory cells are connected to a same word line.

59. (Original) The nonvolatile semiconductor memory according to claim 55,
wherein

while said program / read data is held by said first or second signal line, a potential of a signal line adjacent to said first or second signal line is set at a fixed potential.

60. (Original) The nonvolatile semiconductor memory according to claim 59,
wherein

said fixed potential is a ground potential or a power supply potential.

61. (Original) The nonvolatile semiconductor memory according to claim 55,
wherein

said first and second signal lines are bit lines.

62. (Original) The nonvolatile semiconductor memory according to claim 56,
wherein

while said program / read data is held by said first or second signal line, a potential of a signal line adjacent to said first or second signal line is set at a fixed potential.

63. (Original) The nonvolatile semiconductor memory according to claim 62,
wherein

said fixed potential is a ground potential or a power supply potential.

64. (Original) The nonvolatile semiconductor memory according to claim 56,

Ken Takeuchi et al. – U.S. Serial No. 10/073,999

wherein

said first and second signal lines are bit lines.

65. (Original) The nonvolatile semiconductor memory according to claim 57,

wherein

while said program / read data is held by said first, second, third or fourth signal line, a potential of a signal line adjacent to said first, second, third or fourth signal line is set at a fixed potential.

66. (Previously Presented) The nonvolatile semiconductor memory according to claim 65, wherein said fixed potential is a ground potential or a power supply potential.

67. (Previously Presented) The nonvolatile semiconductor memory according to claim 57, wherein said first, second, third and fourth signal lines are bit lines.

Claims 68 - 81 (Previously Cancelled).